THE NEWSLETTER FOR THE SEATTLE AREA TIMEX USERS GROUP

SWUM

SEPTEMBER 1989

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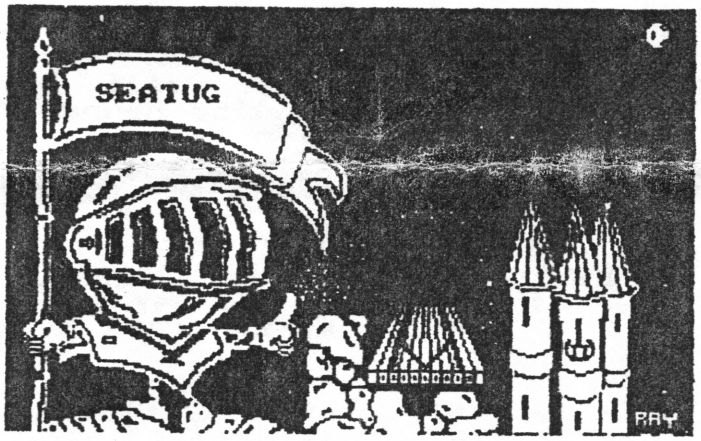
:Robert Cazares



SEPTEMBER MEETING:
SEPTEMBER 7, 1989
THURSDAY 7:30pm

8517 35th Ave. NE, Seattle, Wa.
University Federal Savings Bank

SEATUG General info address:
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10909 N.E. 45th St.
Kirkland, Wa. 98033

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Newsletter Exchange:
Robert Cazares
118 N.W. 84th St.
Seattle, Wa. 98117-3044

Local BBS Update:
Challenger 51-L....(206)827-0346
This BBS is now a closed BBS. What this means is the only way to get access to this system is to be verified. The only way to get access at this time would be to call me(RC)@(206)789-3275 and I can plead with the SYSOP to give you access. What I would need from you is your name, phone number, initials and password you will use on the BBS. You can change your password once you log on.

This months contents:

1)Repeat Key: by: Chuck Kereluck

2)Library News: by: Dale Fritz

3)Random Bits: by: Chuck Kereluck

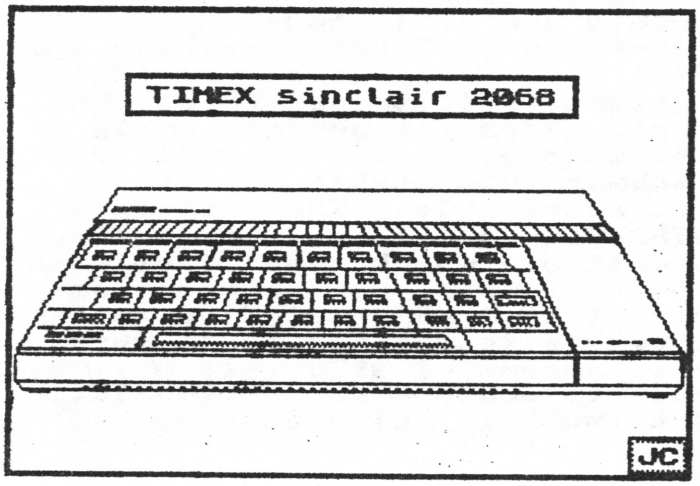
4)Whats' New: by: Robert Cazares

5)Editorial: by: Robert Cazares

6)Everything else we forgot to to mention here.

This months issue was published once again with Pixel Print Pro. Only this time a Zebra FDD 3000 system was used with a 5.25" disk added to the system. The major difference is that this drive formats disks to 620K!!!!! Zebra FDD 3000 users have in the past have only been able to format disks to 160K bytes. For those Zebra disk users the syntax for formatting a 620K drive is as follows:
FORMAT *"drive #" TO "name"D.
It is the "D" that does it.†

NEWSLETTER EXCHANGE:
Any member interested in copies of currently received newsletters, just ask. We have back issues of QZX, which is a newsletter dedicated to all Sinclair computers and amateur radio.



EDITORIAL

BY: ROBERT CAZARES

What's a pixel???
Pixel is the name of the kitten in Robert Heinleins' book, "The Cat Who Could Walk Through Walls". In the computer world however, pixels are the dots used to form the text and graphics on the screen. A pixel does not have to be a dot. It could be rectangular, square, triangular, or even diamond shaped. The greater the number of pixels, the better the resolution. The character matrix is the number of pixels available to form characters. IBM's EGA (extented graphics adapter) boards provide a character matrix of 8 pixels wide by 14 pixels deep. VGA(video graphics array) in its highest resolution provides a character matrix of 9 pixels wide by 16 pixels deep. The Macintosh and Mac Plus has the same resolution, 512 by 342 pixels. The Mac SE has a resolution of 580 by 352 pixels. If you do your math you will find this is lower than a EGA display . The Mac II video card has a resolution of 640 by 480 which is equivilant to a normal VGA display. The new super VGA cards offer up to 1024 by 1024 pixels for use with programs such as CAD/CAM. The Amiga 1000 had 640 by 200 pixels. Current Amigas offer 704 by 440 pixels.
The original IBM PC's had no graphics, but IBM recommended the Monochrome Display Adapter (MDA) which still offered no graphics. For graphics you needed to purchase the Color/Graphic Adapter(CGA also called RGB) which had a maximum resolution of 640 by 200 pixels. Another "standard" filled the gap with a Hercules Graphics Card, which has 720 by 348 pixels(monochrome only). Now, in the late 1980s' High Definition Tele-vision is being developed.
Twenty and still counting.
Twenty what? Twenty separate and distinct proposals for HDTV systems. Of these there are three major catagories: fully compatable, semi-compatable or backward compatable, and those not compatable. The standard NTSC(National Television systems Committee) which was developed in the 1940's, uses a broadcast signal at 6 MHz. HDTV requires anywhere from 8 MHz to 12 MHz. Only owners of HDTV sets will be able to recieve these signals. But, work is being done by NBC and GE/RCA consumer electronics. A "new" standard is emerging and this is called ACTV, which is a single channel NTSC compatable, wide screen, extended definition television set. The NTSC screen in use todayis 483 lines by 440 elements(4:3 NTSC aspect ratio). The NTSC pixel is a rectangle of 1.46:1 ratio. In other parts of the world PAL and SECAM are the standard broadcast signal.
What this editorial boils down to is compatability. How does HDTV and computer video modes fit in? Will there be some form of compatability between the two ? Your guess is as good as mine. If this has shed some light on what the "standards" may become then I have done my job. Below is a list of computer video modes, which I hope will be helpful in understanding computer video. By no means is it complete. Just look at it as a primer and do some further research of your own!

COMPUTER VIDEO MODES

COLORS	BOX SIZE	FORMAT	DISPLAY
16	8X8	40X25	CGA(RGB)
16	8X8	80X25	CGA
16	8X14	40X25	EGA
16	8X14	80X25	EGA
16	9X16	40X25	VGA
16	9X16	80X25	VGA
4	8X8	320X200	CGA
2	8X8	640X200	CGA
MONO	9X14	80X25	MDA
MONO	9X16	80X25	VGA
16	8X8	320X200	EGA
16	8X8	640X200	EGA
16	8X14	640X350	EGA
2	8X16	640X480	VGA
16	8X16	640X480	VGA
256	8X8	320X200	VGA
256	8X16	640X480	SUPERVGA
16	8X14	800X600	SUPERVGA
256	8X14	800X600	SUPERVGA
16	8X16	1024X768	IBM 8514 MONITOR REQUIRED

SINCLAIR 2068 DISPLAY MODE 1

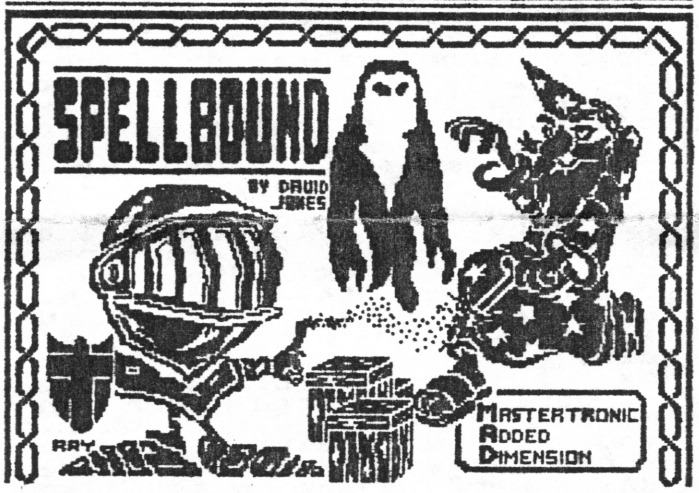
8X8	256X192	COMP OR RGB

DISPLAY MODE 2

8X8	512X192	COMP OR RGB

PASSAGES: William Shockley, 79, co-inventor of the transistor and a Nobel Prize winner whose later life became embroiled in controversy over his racial theories, died of cancer Saturday, August 19. Shockley, who was professor emeritus of electrical engineering at Stanford University, shared the prize for physics in 1956 with Bell Laboratories colleagues John Bardeen and the late Walter H. Brattain. The teams first semiconductor device, developed during what they later

Shockley cont.
called a "magic month" during 1947, was an innovation that made the electronic age possible . Most modern devices, from airplanes to wristwatches to computers, contain the technical descendants of Shockley's work. Shockley's later life was marked by bitter controversy over his claims that intelligence was genetically determined and that blacks were genetically inferior and as a group coould not be as bright as whites.(AP)
Editors note: How's that for incompatability!!!



MIT's Media Lab Current Projects
1)HDTV products 2 to 3 times greater in density levels than any commercial HDTV products now in development.
2)Real-Time,synthetic three dimensional holography which is leading to full motion holography.
3)The Range Camera-provides two full motion images of the same scene from different perspectives.
4)Conversational Desktop- a voice controlled computer system that acts like an automatic receptionist, personal secretary, and travel agent.

What will they think of next????

Micheal O'Brien's column in Computer Shopper is back. See the August 1989 issue, More Timex/Sinclair. He has a comprehensive list of software and hardware vendors.

Fred Blechman who wrote the Beg/Int Guide to the T/S 2068 can also be found in Computer Shopper. "Picture This-Graphic Labels for YOUR PC" August 1989

LIBRARY NEWS

by Dale Fritz

Nine new programs and three books have been added to the SEATUG Library, since the 1989 index was issued. A detailed description will be in your next index, but here are the titles:

1000

PHONE BOOK
VISIBLE SORT II

2068

BUILD 3D
VISIBLE SORT II
STAR TREK
FROGGER
ACES HIGH
LOW LEVEL MISSION
POOL

BOOKS

PROFILE 2068 (143 pg)
YOUR TIMEX SINCLAIR AND ZX81 (Hergent, 159 pg)
SYNCWARE NEWS 1985-1988(vol 1-5)

No news from Washington on the ill-fated seven cassettes I had to send back. Look forward to their second coming.
Dave Battershill brought a whole grocery sack of 2068/Spectrum programs to the last meeting, which are now being moved into the library. I estimate it will be more than 100 new programs!

REPEAT KEY

by Chuck Kerelluck

One of the most useful items you can have for that good ol' doorstop computer of yours is an auto-repeat key circuit. Obvious benefits include a smoother feel to the "action" of a computer game, vastly superior to the constant pounding of arrow keys.

Besides, one could wobble his RAM pack, that way. And you know what that means! So, if for no other reason, a repeat-key circuit is needed to decrease RAM pack wobble.

Another innovation for the TS1000??

The circuit described here is successful because it replaces several control points for the keyboard matrix - namely those eight keyboard diodes. The diodes are replaced by triggerable buffers. The trick, of course, is to trigger them repeatedly and rapidly with pulses. This is where an additional oscillator comes into play. An NE555 timer chip does the job, quite nicely.

It can give that key contact a conducting pulse whenever you want it. If you can alter its pulse rate, also, you can have it however many times you want it. Take a look at Fig. 1, where this idea begins to take shape.

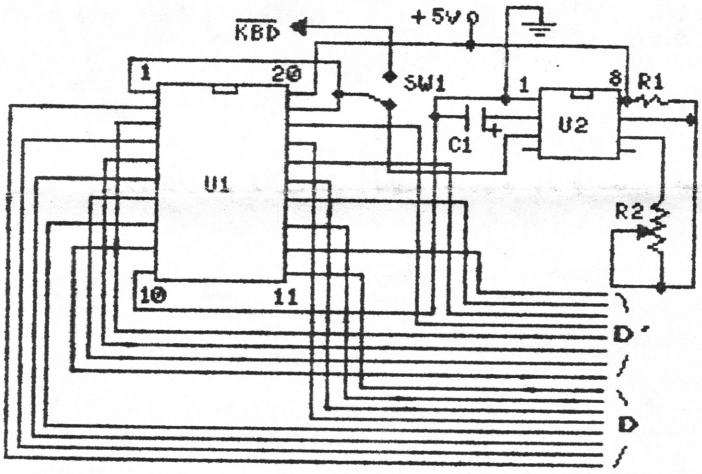


Fig. 1

PARTS LIST

C1-100 mfd capacitor
R1-1k ohm resistor
R2-10k, 20-turn potentiometer
SW1-SPDT mini-toggle switch
U1-74LS244 integrated circuit
U2-NE555 integrated circuit
MISC-circuit board, IC sockets, wire, solder, etc.

Actually, it's a very simple circuit, since the parts count is so few. For every keyboard diode, is a buffer replacing it. Within the 74LS244, there are 8 of them, with an input side and an output side. The input side has been designated D, while the output side is D'. Triggering is accomplished at pins 1 and 19 via oscillator U2. C1 and R2 set the time constant for U2's output, which is taken from pin 3. Since R2 is variable, different repeat-key rates can be set. Switch SW1 is a single-pole, double-throw toggle type that is used to activate the repeat key function or restore to non-repeat mode.

Let's get down to business. First of all, we have to get rid of those diodes. They appear on the board, right in back of the keyboard ribbon connector. Carefully remove the two ribbon cables from the connector. Has anyone found a reliable method for repairing torn ribbons? You can trim them down about once, then panick sets in. Maybe a new keyboard will fix it. With a low-wattage soldering iron and needle-nose pliers or forceps, remove the diodes. Use a de-soldering tool to remove the solder from the plated-thru holes formerly used by the diodes.

Now, build the circuit! You may decide to etch your own printed circuit board for this. If you do, you'll have to design your own pattern, because I chose to use a perf board with flea clips. If you do design it, you may consider submitting that pattern to SWYM for later publication.

After the initial construction cut yourself two short lengths of eight-conductor REAL ribbon cable and strip/tin all ends. These will be used for the D line and the D' line. Refer to Fig 1 and solder one end of each cable to the appropriate pin connection of U1. Refer to Fig. 2 to see where on the board to solder up the other ends.

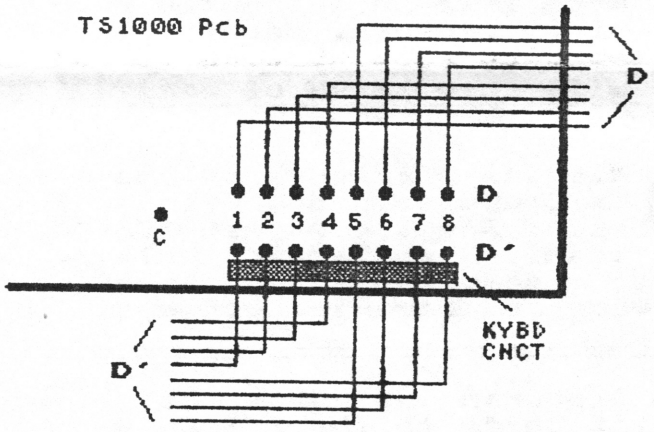


Fig. 2

Be certain that the correct pin locations to U1 are going to the correct locations on the board. In this illustration, the

(cont. next pg)

old diodes were positioned along locations 1 thru 8, connected at corresponding points along rows D and D'. Solder the other cable ends to the old diode holes. Look immediately to the left of this area where a letter 'C' is printed on the board. Use the larger solder pad there as a convenient +5VDC source. Just about any source should be ok, unless you're using a TV set for a monitor. In this case, you may want to avoid the modulator area to further avoid interference. To be certain if a "pad" is a 5 volt souce or not, power up the computer and measure it with a voltmeter. Usually, if it's not a good source, the system will crash.

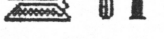
Wire in the toggle switch, next. At the bottom are 3 solder terminals. Solder a wire from the center terminal to the pin 1/19 connection of U1. Run another wire from a side terminal to the number 3 pin of U2. Finally, solder a wire from the remaining terminal of the switch (KBD) to any convenient ground location. That narrow metal strip running diagonally underneath the TSI000 board is a good spot. Use this spot for the negative power lead, as well.

Carefully plug those flimsy keyboard ribbon cables back in. It's always much easier to pull them out than putting them back! Personally, I was able to bypass this step, because, by this time, I had a full-sized, replacement keyboard wired up.

Now for the acid test! Recheck all the connections, button everything back up and apply power to the computer. If the ■ comes up, you can breathe a sigh of relief! Try out the key board. With the switch set to the grounded side, key action should be normal. Now flip the switch and try it again, holding the key down this time. You should get a keyword and several of the same letters, rapidly appearing on the screen. If you don't, maybe the repeat speed is set too low on R2. Try changing it. If that fails, shut everything down and go back and try to figure out where you screwed up.

Once you have the circuit working, you need to play with it a bit to get the repeat rate just to your liking. With a 20-turn pot for R2, you may get a sore wrist before you exhaust all possibilities, but you'll get a good idea of its capabilities. One thing to watch out for, is not to get the rate set too high. It appears that the rate can be set much higher than the CPU's sampling rate of the keyboard, thereby locking it out.

Have fun!



TECHNICAL TALK-NOTES-DIAGRAMS-DATA-SUGGESTIONS-INFORMATION...

Random Bits

TECHNICAL TALK-NOTES-DIAGRAMS-DATA-SUGGESTIONS-INFORMATION...

by Chuck Kerelick

MORE PIXEL PRINT

There was a demo given at last month's meeting on Pixel Print and the icon/font libraries. Robert Cazares was there to demo the FDD disk version of Pixel Print Professional and I was demo-ing the icons. Other than being hit over the head a couple of times by Murphy, the demo was ok. There sure are a lot of features to this stuff! One of the more interesting aspects is the ability to change fonts at any time. Doing this not only affects the typestyle of a Pixel Print column, but of the 2068 system, in general. Load in an exotic font and break out of the program. List it. You still have your chosen font! This has got to have other applications besides Pixel Print.

The icons are a lot of fun. With no less than three icon libraries at our disposal, having roughly 100 icons to each library, we have quite a variety to play with. So what do we do when we fianlly exhaust our icon possibilities? Load in the icon designer and make our own! This is real easy and fun to do, since the designer is joystick-controlled.

By the way, Dale Fritz now has copies of all Pixel Print software, including Pixel Print Plus and Aerco disk and cassette tape versions of Pixel Print Professional. Robert has the FDD version on disk. Please contact him or myself if you wish other disk versions. Also included in the club's library are the mastheads/borders program and Icon Library III. Font and Icon liraries I and II are part of the collection, too, although this particular set is not yet public domain. Documentation is available for all Pixel Prints and some supporting software. Operation of all this DTP stuff is fairly well-known between Robert and myself, so if you have any questions, see us.

HERE A FONT, THERE A FONT...

With all of these fonts lying about, we need to determine what looks and feels best for general typesetting of articles. We're using a different type than last month. We used two different types, then: SINCLAIR was used for the cover (as is this month) and the Sinclair User Corner. The rest of the main text was done in TIMEX font, which is the default built-in to Pixel Print. Right now, I'm using something called, "TIMES", which is from Font Lib II. We may be experimenting with different ones from time to time. Here is a rundown of what's currently available:

THIS ONE IS CALLED "HEADLINE" AND IT LOOKS LIKE THIS.

This font is "IBM" and is supposed to look familiar.

Here is a 'computer' font called "MICR". It looks like this.

For the 'devil-may-care' in all of us, here's a font called, "ADVENTURE."

For shifting around the issues, you may want this "OUTLINE" font

or, for those shy folks who are submitting a SWYM article for the first time, this tiny "5X5" font may be what you need.

A cousin to the ADVENTURE font is one called, "CHANCERY." It looks like this.

Returning more to the norm is the "HELVETICA" font.

R e t u r n i n g a w a y f r o m t h e n o r m i s
t h i s " B O X B L O C K " f o n t .

Here's a font for "puttin' on the..." or when munching those yummy round crackers.

To satisfy that "life in the fast lane" urge, you may want to go with this "GRANDPRIX" font

So there they are! Don't forget that we can also choose a **Bold**, *Italics* or even a ***Bold Italics*** version of all of the above. Add to that the ability to expand any letter to just about any size we want, and you are looking at a large variety, indeed. If we do get bored, though, we can always hit Bill Ferrebee up for Font Library III ...

WHAT ARE THOSE FUNNY ICONS FOR?

Some of you may have been wondering about those funny little pictures at the end of some columns in past two issues of SWYM.

We're sort of experimenting with a concept.

Those icons are to serve as a type of signature to the accompanying article. Construction articles will "sign" with icons of a computer and screwdriver/hammer, hopefully symbolizing "computer construction." This column will end with a chip. Others for other columns may or may not appear. We're sort of experimenting.

NEW COLUMNS

As of last month, we're kicking off some new columns that will, hopefully, become regular features:

"SINCLAIR USER CORNER"
by Robert Cazares promises to be an interesting view of the still active Sinclair world in Great Britain and other informative tid-bits;

"News from Around the Clubs"
The newsletter exchange system can provide a regular influx of information from other users around the country, to be dispersed to you thru this column. Unfortunately, it was cancelled this month for no input.

"SWYM ADS"
A want-ads column is hardly new, but if you have anything at all to sell, that other club members or anyone else who gets this paper might be interested in, mail, phone or modem (sorry, no fax) in your ad to "SWYM ADS", 9013 32nd Ave. NE, Seattle, WA 98115 or phone 206-523-5272. If we receive your ad in time for the next issue, you'll get your own unique icon placed next to it!

OPPORTUNITY

Now that your favorite newsletter (maybe one of your favorites?) has all of this neat capacity to it, we really need to work out the best way to use it. And the best way to figure that out is to turn to the best people qualified to judge, constructively criticise, suggest, contribute and praise: You, the readers.

This is your big chance to make SWYM into the kind of newsletter YOU want it to be. What do you want to see in here? Do you like the construction articles? How can we improve them? We mostly work with what's personally available, and, to tell the truth, it's seriously lacking in some areas. How about that 2068 RGB mod? How about that 128K TS1000? Tech Draw Jr. is a lot of fun to devise schematics with. Pixel Sketch and Graphics Editor has some fascinating additional capabilities, although the version in our library operates a bit awkwardly. These and other graphics programs can be the source of some fun and interesting things. We're still looking for a fully-compatible IBM/RLE conversion program. We do have one for the PC that will load RLE, but not save it. Dale has the 2068 version in the club's library, now. Time Designs, back when it was a reliable publication, ran a series of impressive RLE stuff for the 1000. Please, be on the lookout for any graphics conversion stuff for the PC, Mac, or any other microcomputer that generates decent graphics. I know there's schematics, artwork and photo-scans galore, out there in mainstream-computerland. Let's reel 'em in.

WANT ADS

Send your notices to:
"SWYM ADS"
9013 32nd Ave NE
Seattle, WA 98115
or call
206-523-5272

WANTED =
Aerco printer interface for the TS2068. With docs. Call 523-5272

WANTED =
Your ad in this space.